Full Length Research

Enhancing Nigerians' Compliance with COVID-19 Safety Protocols: The Imperative of Communication Theory

Titilayo Remilekun Osuagwu

University of Port Harcourt, Rivers State, Nigeria

Author's Contact Detail: e-mail ✉: titilayo.osuagwu@uniport.edu.ng

In communication scholarship, theories and models form the foundation for explaining and comprehending beliefs, attitudes, opinions and thoughts. They also predict and control behaviour patterns and influence communication. Despite the centrality of theories in human endeavours, their role in addressing health-related issues is underrated; thus, there is a paucity of research about the need to leverage communication theory in designing health-related communication. The spread of the COVID-19 pandemic in Nigeria led its policymakers to develop a set of safety protocols to curb the spread of the menace. There were lots of informational materials to pass the messages to the masses. However, the compliance rate to the laid down safety protocols was inadequate which has resulted in a high percentage of community transmission. This study interviewed eight (8) health communicators in Port Harcourt, Nigeria, about their knowledge of health communication theories and reviewed theories of health communication that policymakers and their communication officers need to identify and pay attention to when framing information about adherence to safety protocols. The article highlighted the importance of how communication theories can help reduce information gaps, promote acceptance and minimize the lack of adherence to safety protocols in Nigeria.

Keywords: Enhancing, compliance, Covid-19, safety protocols, communication theories.

INTRODUCTION

Since December 2019 when the first COVID-19 case broke out in Wuhan, China, the virus has spread across 188 countries resulting in a pandemic (Centre for Systems Science and Engineering, 2020). Regardless of social status, the virus has ravaged both the advanced nations of the world and those countries considered to be less developed. Statistics provided by the Center for Disease Control (NCDC) revealed that three million, three hundred and thirty-nine thousand, one hundred and ninety-three (3, 339,193) deaths have been recorded from about one hundred and sixty million, one hundred and fifty-five thousand, nine hundred and fifty (160, 155, 950) cases globally. The African continent has had its fair share of the pandemic. In Nigeria, the minister of health reported the first case in Lagos on February

27 2020 with the case being an Italian who traveled from Milan, Italy to Lagos (Ehanire, 2020). Since then, over two thousand and sixty-five (2,065) deaths have been recorded from above one hundred and sixty-five thousand five hundred and fifteen (165,515) cases (worldometre.info, 2021). Schools, workplaces and general gatherings were closed and activities became grounded globally because of the pandemic. Communication is central to health and effective health communication should ideally be guided by theories (Dutta, 2008; Ruben, 2014; Dutta, 2018). Despite the importance of theory to health communication, policymakers, the media and information designers for health rarely foreground health communication in theories. Regarding the COVID-19 pandemic, the government put certain measures to contain the spread of the virus. Such measures included stay-at-home orders, wearing face masks, hand washing with soap and water, practicing social distancing, using alcohol-based hand sanitizers and so on. Many of those orders and measures were violated and that consequently led to the spread of the virus in Nigeria.

It was observed that at the inception of the pandemic, communication in Nigeria centred on blaming the governments of other countries for its spread rather than concentrating on messages concerning its potential risk. The failure of practitioners to effectively apply communication theories to the discharge of their duties regarding the health challenge was obvious.

STATEMENT OF THE PROBLEM

Improving the general effect of health communication through theories has been a source of concern lately. Ruben (2014) observed that "Inadequacies in the articulation and translation of communication theory for health care practice represent a substantial part of the problem." He suggested that research highlights concepts that may help to enrich the contribution of communication theory in health care, health education, and professional practice. In addition, he observed gaps between theory and practice that demanded the attention of health communication scholars, educators and practitioners. Some steps were designed to reduce the spread of the COVID-19 pandemic. Among which were communications promoting social distancing, mask-wearing, frequent hand-washing, quarantining and isolating patients. There was the closure of schools, public spaces and non-essential businesses

as well.

Experts have explained that vaccine development, public awareness, and being generally proactive about public health issues are an antidote to ending the virus just like the flu pandemic between 1918 and 1819 which was considered the deadliest in the history of man (Waxman, 2020). Still, the fact that nobody knows when the pandemic will end and peoples' attitude towards vaccination call for the need to take all safety measures seriously. It is noteworthy for instance, that despite the importance of hand washing to good health and the containment of the Covid-19 pandemic, there is still a low hand washing culture among Nigerians. To this, Enahire (2020) noted the need to communicate to the people in the right approach by cascading messages via peoples' taboos using their village heads and using their religious leaders in churches and mosques. The above assertion buttresses the error in the present approach to communicating health behaviours to the people in Nigeria. Similar to Paulo Freire's concept of empowerment through involvement, communication has to be empowering and empowerment can be achieved through health literacy and participation.

AIM AND OBJECTIVES

This research aimed to ascertain how health communication theories could help package and disseminate safety protocols regarding the COVID-19 pandemic. The specific objectives of this research were two-fold: To;
1)   ascertain the extent to which Port Harcourt policy formulators and information officers knew health communication theories in packaging and disseminating COVID-19 safety protocols.
2)   establish the theory of health communication professionals in Port Harcourt often use in giving information about COVID-19 safety protocols.
3)   determine a plethora of theories that health communicators could leverage to communicate the COVID-19 health protocols.

RESEARCH QUESTIONS

1)   What is the extent to which Port Harcourt journalists had the knowledge of health communication theories in disseminating COVID-19 safety protocols?
2)   Which theory of health communication do professionals in Port Harcourt use for giving

information about COVID-19 safety protocols?

3)   What are the relevant health communication theories that communication experts can leverage about the information on enhancing Covid-19 safety protocols?

REVIEW OF RELATED LITERATURE

Health Communication

Health is the state of total physical, mental and social wellness. Communication is the exchange of information between two or more individuals (Batta 2013). Thus, health communication is any context of interaction that links communication and health to further health care provision as well as promote healthy habits (Okoro et al., 2015; Batta 2013). According to the Center for Disease Control (2020), health communication "is the study and use of communication strategies to inform and influence individual and community decisions that enhance health." Batta) citing (Ratzan, 1994) defined health communication as the art and technique of informing, motivating and influencing individual, institutional and public audiences about important health issues." Okoro et al., (2015) described health communication as that which is used in fighting both pandemic and epidemic health risks.

It has been observed by scholars that health communication is a contemporary field of study (Batta, 2007; Batta, 2013; Okoro et al., 2015). According to Batta (2013), health communication was barely three decades old as a recognized field of human endevour. Its function encompasses the prevention of diseases, promotion of health, promotion of health policy formation and improvement in life and well-being of individuals and society (Batta, 2013). All these functions can be carried out at different levels that range from interpersonal, group and mass communication.

The importance of mass communication in health information dissemination cannot be overlooked. The mass media package information from the public space and brings it to individuals in their private spaces. In corroboration, Okon (2015) noted that "the media through content portrayal can condense events into an individual private sphere and thus enable that individual to connect with the whole world." The characteristics of mass media endowed them with the ability to bring about social transformation by creating awareness, impacting opinions and engendering attitudinal change (Okon, 2015; Nsude, 2015).

Interpersonal channels in their way are very efficient in health communication. According to Batta (2013), successful health communication ensures that interpersonal "information support systems," among other things, precede mass communication. According to Batta (2013), there are eleven features of sustainable health communication. They include accuracy, availability, balance, consistency, cultural competence, evidence base, reach, reliability, repetition, timeliness and understandability. He further mentioned health communication competence to include, awareness, compassion, descriptiveness, receptiveness, adaptiveness and ethics. All those are attributes that adequate knowledge of health theories can engender.

Health Communication and Theories

Batta (2013) noted that one of the reasons for theories is to "control behaviour." Many communication theories abound, but not all of them can affect health behaviours. Efforts have to be made to identify the key ones that are central to affecting people's knowledge, attitude, beliefs, and behaviour. Especially when it comes to inclusive health communication that involves rural people, poor people and special groups; communication has to have an audience-centred perspective (Batta, 2013). Concern about the role of theories in health communication is gaining prominence (Batta, 2007; Paek, et al., 2010; Alaskow, 2012).

However, the challenge exists regarding how to improve healthcare provider versus patient communication and how to improve the general effect of health communication (Ruben, 2014). He observed further that "Inadequacies in the articulation and translation of communication theory for health care practice represent a substantial part of the problem." He suggested that research should "highlights concepts that may help to enrich the contribution of communication theory in health care, health education, and professional practice." He observed gaps between theory and practice which demand the attention of health communication scholars, educators and practitioners.

Scholars have explained that theories of health communication are social mobilization, communication for behavioural change, social marketing and integrated marketing communication among others (Batta, 2007; Alaskow, 2012). Alaskow

(2012) submitted that those were theories in development communication. There is therefore a problem if health communicators are not familiar with health communication theories to educate the public accordingly. According to Fentahun (2014), theories of health communication should be chosen based on the purpose to be achieved. For instance, when the goal is to advocate certain health behaviour, there are three levels of the determinant of behaviour that precede the choice of theory. Those determinants include Predisposing (Individual level), enabling (system level) and reinforcing (group level).

Related Studies

Research in communication and COVID-19 is still evolving. For instance, Ou (2020) in her study entitled "Risk and Efficacy Uncertainty as Motivators of Information Seeking and Protective Behaviors when Facing COVID-19," used risk perception theory, and the theory of motivated information seeking to explain how some people adhered to health protective behaviours while others do not. Her research shows that perceived risk is related to the intention to seek health information and the intention to adopt healthcare measures or perform protective behaviours in low uncertainty behaviours. In the same vein, Guidry et al., (2020) using the health belief theory, have demonstrated that demographic and psychographic variables have a role to play in intentions to adopt health preventive behaviours. Sushma et al., (2020) in their study entitled "Twitter Conversation around COVID-19 during Pre-Pandemic Period: Stigma and Information Format Cues" found that stigma-related messages were more than informational messages on social media. They explained that the sources of such messages were lay people, influencers and media.

According to Weilu et al., (2020), a prevailing health crisis can excavate preexisting social identity crisis. Thus, the culture-centred approach gives a framework for creating a subaltern theory of health communication as inequality arises when there is inequality in opportunities for community voices. They argue that structural inequality and communicative inequalities are related and communication can be used to address inequity in access to materials by creating spaces of recognition and representation of the voices of the people who are perceived to be violated, distanced and of lower status or subalterns (Dutta, 2008; Dutta, 2018). Such recognition and representation can be done through community advisory boards, community coalitions, grassroots advocacy organizations and even community social movements (Dutta, 2018).

Theoretical Assumption

This research is premised on the use of theory in health communication. Meta theory is a critical exploration of theory. It is concerned with the investigation, analysis, or description of the theory itself (Bates, 2005). In illuminating the notion of meta-theory, Finkel (2014), explained that it is a set of assumptions that can be used to guide the formulation of research questions and culminate in the development and modification of other theories. Therefore, Meta theory accounts for theories that have evolved through research in a particular field of endeavour. The Meta theory from its evolution in mathematics where it was originally developed to explain mathematical theories has been used in diverse sociocultural settings including health-related issues. To this discourse, the Meta theory highlights the use of theories in a field like health communication. This theory is apt because the subject matter of this study is theory. The concern here is how to advance the knowledge of health theories and the importance they hold for effective health communication. This is because theories can be utilized for appropriate health information that brings about attitude change (Kincaid et al., 2012; Okoro et al., 2015; Batta, 2013). For such a purpose, widely validated theories of health communication and behaviour provide an objective lens that can help to focus and guide health communicators. For instance, the ideational Meta theory that was formerly developed to explain the decline in fertility in the developing world (Cleland and Wilson, 1987; Kincaid, 2000), has now been widely used and adapted to a variety of sociocultural settings and across a range of health and development issues, including family planning and reproductive health (Kincaid et al., 2012). Also, the meta-theory of healthcare communication argues that the effectiveness of a health communication intervention is a result of the successful interaction between resources and psycho-social factors that would influence behaviour change (Kincaid et al., 2012).

METHOD

This study employed qualitative research designs.

Those were oral interviews and document reviews. In the first phase, a qualitative interview was done to ascertain the extent of knowledge about the theory of health communication. Thus, the interview questions were designed to screen for theory familiarity. Eight (8) health communicators comprising four (4) health journalists, two (2) health information officers and two (2) Local Government health officials were purposively selected from different media houses and the ministry of health in Port Harcourt City. Their mean age was 40 and 5 were males, while the remaining three were females.

The second phase involved the collation of literature regarding health communication theories. Only theories that were considered to have implications for health communication were selected. Thus, eleven (11) theories were selected.

Data Analysis

Research Question one: What is the extent to which Port Harcourt journalists had the knowledge of health communication theories in disseminating COVID-19 safety protocols?

To analyze the above research question, an in-depth interview was conducted with eight health communication professionals comprising four health journalists, two health information officers and two Local Government Officials from the department of health. More than half of the interviewees said they were not aware of health communication theories. They never used it in designing messages about safety protocols. One of the respondents said, "I studied Mass Communication and was never told of health theories in my school days." Another female interviewee said, "My job as a health reporter is to create awareness about health issues, I don't have the time for theorizing." Still, another one explained that "as we often organize seminars on COVID-19 safety protocols in my organization; I normally give my speeches giving real-life examples of how people have been dying due to noncompliance to protocols, not based on theories" she added, "who has time for theories?" Still, the fourth respondent expressed her disdains for theories thus, "I don't like theories from my school days because all communication theories sound alike." In the same vein, another interviewee perceived health theories as invalid as she retorted that "we are in the days of practicality, what do health theories have to offer me?" She added, I left theories in the classroom since my graduation."

The remaining three interviewees, constituting less than half of the interviewees attested to the centrality of the agenda setting theory in health communication. One said, "a good knowledge of the agenda setting theory helps me in health coverage." The other two respondents corroborated the fact of the agenda setting theory in reinforcing their competence in health campaigns.

Research Question two: Which theory of health communication do professionals in Port Harcourt use in giving information about COVID-19 safety protocols?

Like research question one, the three interviewees who agreed that they normally use theory were asked to name the specific theory they often deployed. Surprisingly, the three respondents named Agenda setting theory as their theoretical inclination. The first respondent said, "I was told in school that giving too much information about a particular issue makes people talk about it. I don't forget that theory in my health reportage. So, in covering my beat, I give enough information about the need to adhere to safety protocols." In the same light, another respondent said, "You can see that safety protocols have entered everybody's lexicon, thanks to the media." An information officer said, "all those handbills I give people both within and outside my office, make people call me 'madam safety protocols' and I think they adhere to such protocols."

Research Question three: What are the relevant health communication theories that communication experts can leverage concerning information on enhancing COVID-19 safety protocols?

To analyze this research question, a review of documents was done to select eleven health communication theories. A summary of this is presented in the Table 1.

DISCUSSION

The study has demonstrated that information packaging about COVID-19 safety protocols takes no recourse to theories of health. Only three of the eight respondents interviewed often think about health communication theories. This finding corroborates Guidry et al., (2020) on the imperative of a theory like

Table 1. Showing theories for enhancing effective health communication on COVID-19 safety protocols.

S/N	Theory	Author (s)	Year	Basic Assumption	Level of Assumption	Utility for Journalists and Health Educators.
1	Health Belief Model	Geoffrey Hochbaum and further developed by Becker, Haefman and Maiman	1950s and further developed in 1977	It explains an individual's perception and attitude toward diseases and the consequences of certain actions (Burke, 2013, Okoro et al., 2015).	Individual	The theory provides an understanding of the factors that influence the health choices people make, targets how to reduce barriers, improve knowledge and motivates for action.
2	Diffusion of Innovation	Everett Rogers	1962	It explains the spread of new ideas in society and from one society to another (Batta, 2013; Okoro et al., 2015).	System	It helps to recognize the need to collaborate with non-media sources.
3	Precede Model	Lawrence W. Green	1974	It is an approach that established factors that enhance behaviour change (Batta, 2007).	System	Health communicators can understand predisposing, enabling and reinforcing factors that trigger behavioural change.
4	Social Cognitive theory	Albert Bandura	1986. Initially social learning theory (1960s) but changed to social cognitive	It describes the interactions between individuals, groups and society in bringing about attitude change. Here behavioural capabilities and self-efficacy among others, are vital to behavioural change (Kelder et al., 2017).	Group individual's behaviour.	The theory provides an understanding of the influence of social settings on individuals.

the health belief theory, in understanding demographic and psychographic variables that play out in the intentions to adopt health preventive behaviours. Similarly, Miller et al., (2020) observed a dearth of media studies on social science theories and call for the need for improving the formal presentation of theories. Still, on the relevance of the theories, Leigh (2020) observed that journalism and public relations were practiced without theory definitions. She calls for the use of specific models and theories within specific tasks. This finding highlights the theoretical significance of the Meta theory in contemporary society. As explained above, the theory is important to every field of human endeavour as every field of endeavour needs to leverage theory for practice.

This study found that the agenda-setting theory was the most familiar health communication theory to health

Table 1. Continue.

5	Uncertainty reduction	Charles Berger and Richard Calabrese	1975	It explains communicative and non-communicative reasons for uncertainty and how to recognize them. (Berger and Calabrese, 1975; Rob et al., 2020).	Individual	It helps health communicators tailor communication towards uncertainty reduction about, for instance, the COVID-19 pandemic.
6	Information processing theory.	Miller George	1950s	Explains the mental process the human brain undergoes in processing information (Batta, 2013).	Individual	It helps to gain an understanding of how individuals process and retain tailored health information.
7	Risk perception theory	Chauncey Starr	1969	Highlights cognitive, perceptual and individual factors that determine how different groups of people estimate the risk (Star, 1969)	Individual	Health communicators would understand how different people perceive risk.
8	Discrete emotion theory	Tomkins Silva	1962	Identified eight universal emotions expressed by people. They are surprise, interest, joy, rage, fear, disgust, shame, and anguish (Tomkins 1962).	System	It would help communicators understand the different emotions that people express in the face of danger.
9	Elaboration likelihood theory.	John Cacioppo and Richard Petty.	1985	Sees attitude formation as a consequence of direct information processing using either the central or peripheral routes. (Batta, 2013).	Individual and group 3	Knowledge of this theory may help health communicators involve message recipients to an extent that they would take the elaborate route to information processing and behavioural change.

communication experts. This theory may help in terms of disseminating helpful information, but may most help in engendering attitude change. For instance, Wong, et al. (2020), in their study entitled "Fast and Frugal: Information Processing Related to the Coronavirus Pandemic used dual processing of information theory to show how individuals process information about covid-19 and deployed the attribution theory to show how the media dwelt on blame communication rather than deploying effective preventive measures.

This study highlighted theories of health communication that health communicators could leverage for sustainable health communication. This agrees with Miller et al., (2020) that theories serve as a guide to human

Table 1. Continue.

10	Social stigma theory	Ervin Goffman	1963	Explains how certain individuals are rejected in society owing to certain discredited attributes they possess (Goffman, 1963).	Individual and group	This theory will help communicators to decipher the effects of stigma communication when there is a threat to health.
11	Agenda Setting	Walter Lippmann Developed by Max McComb and Donald Shaw	1962 and 1972/73.	It describes the ability of the news media to attract importance to public discourse in society (Asemah, 2011)	System	It would help health communicators to understand the strength of the mass media in promoting awareness about health issues.

behaviour and thought processes.

CONCLUSION

In the exploration of theory use in disseminating information about the COVID-19 safety protocols in Port Harcourt, Nigeria, we have shown that health communicators show little regard for theories and this could account for the lack of compliance to the safety protocols daily advanced. We have demonstrated that health communication should not be done haphazardly as several theories exist that could help focus communication that would bolster change in attitude. The agenda theory often used by health communicators may no longer be valid in all contexts because society has become more fragmented, hence the need to always integrate mass communication and interpersonal communication for effective health communication outcomes.

LIMITATIONS AND FUTURE STUDIES

This study primarily used qualitative data alone to focus on theories alone as used for information dissemination about COVID-19 safety protocols. An experiment could be performed in the future to measure the effect of health communicators' theory use on message effectiveness and attitudinal change. Still, a mixed method could be used to establish effectively and verify the most employed health communication theory in the reportage of the COVID-19 protocols compliance.

RECOMMENDATIONS

Given the findings of this study and the issues raised, the study recommended the following:

1. Health policymakers, journalists and communication scholars should get acquainted with health communication theories. Knowledge of theories of health communication would help them know the nuances of different audience segments when designing health information.
2. The university curriculum for studying mass communication should be reviewed to pave the way for studying health communication as an independent subfield not just as a topic in the communication department.
3. Immediate measures should be deployed to highlight how communication theories can help reduce information gaps, promote acceptance and minimize lack of adherence to safety protocols through seminars, roundtable discussions, town halls and conferences among others.

REFERENCES

Alaskow M. (2012). What are the main theories of health communication? Retrieved

from: https://www.researchgate.net/post/What_the _main_theories_of_health_communication/53d23c 6dcf57d7de6c8b45ee/citation/download

Asemah E.S. (2011). Selected Mass Media Themes. Jos University Press.

Batta H.E. (2007). Theorizing on Communication Competence in Healthcare Settings: The Rogersian (Existentialist) Uyo Journal of Humanities, 12: 218-228.

Batta H.E. (2013). Health communication/Journalism. In Des W. and Herbert B. (Eds), Science, Health and Environmental Communication. Pp. 131-165, Ibadan University Press.

Bates M.J. (2005). An Introduction to metatheories, Theories, and Models. In K.E. Fisher, S. Erdelez and L. McKechnie eds theories of information Behaviour (pp1-22). Medford, NJ: American Society for Information science and Technology.

Berger C. and Calabrese R.J. (1975). Some Explorations in Initial Interaction and Beyond: Toward a Development Theory of Interpersonal Communication. Human Communication Research, 1 (2): 99-112.

Burke E. (2013). The Health Belief model.www.iccwn.org.an/useruploads/files/soyf/20 13..../the-health-belief-model.pdf.

Center for Disease Control (2020). Health Communication basics. www.cdc.gov/healthcommunication/healthbasics/ whatishc.htm.

Centre for Systems Science and Engineering (2020). COVID-19 Dashboard. CSSE at John Hopkins University ArcGIS John Hopkins uni. retrieved June 17 2020https://covid19.ncdc.gov.ng/

Dutta M. (2018). BUILDING Communication Infrastructure for Subaltern Voices

Dutta M.J. (2008). Communicating Health: A Culture-Centre Approach. Malden, Ma Polity press.

Enahire S. (2020 a). First case of corona virus disease confirmed in Nigeria. ncdc.gov.ng. Retrieved, 25 June 2020.

Enahire S. (2020 b). Hand hygiene and good health. Good morning Nigeria a Nigerian Television Authority Programme.

Fentahun N. (2014). What are the main theories of health communication? Retrieved from: https://www.researchgate.net/post/What_the _main_theories_of_health_communication/53d23c 6dcf57d7de6c8b45ee/citation/download

Finkel E.J. (2014). The 1³ Model: Meta Theory, Theory and evidence: Advances in Experimental

Social Psychology. https://www.sciencedirect.com/science/article/pii/B 9780128000526000019

Goffman E. (1963). Stigma: Notes on the Management of Spoiled Identity. Prentice Hall. ISBN 978-0-671-62244-2.

Guidry J., O'Donnell N., Austin L. and Coman L. (2020). Stay socially distant and Wash Your Hands: Determining Intent for COVID-19 Preventive Behaviors. An AEJMC Referred paper session on Examining COVID-19 Communication and Information Behaviors by Communicating Science, Health, Environment and Risk Division, https://doi.org/10.1177/1050651920959188

Kelder S., Hoelscher D.M. and Shegod R. (2017). Social Cognitive Theory Applied to Health and Risk Messaging. https://oxfordre.com/communication/view/10.1093/ acrefore/9780190228613.001.0001/acrefore97801 90228613-e-259

Kincaid D., Delate R., Storey J. and Figueroa M (2012). Advances in Theory Driven Design and Evaluation of Health Communication Campaigns: Closing the Gap in practice and Theory. In Rice, R. and Atkins C. (Eds.) Public Communication Campaigns (4ᵀᴴ ed., pp. 305-320). Newbury Park, CA: Sage.

Kincaid D (2000). Mass Media, Ideation and Behaviour. A Longitudinal analysis of contraceptive change in the phillipines. Communication research, 27(6), 723-763.doi:10.1177/009365000027006003

Cleland J. and Wilson C. (1987). Demand Theories of the Fertility Transition: An Iconoclastic View. Population Studies, 4 (1): 5-30. Doi:10.1080/0032472031000142516

Leigh A.T. (2020). The Journalism Public Relations Role Continuum. An AEJMC Referred paper session on Communication Models and theories by Communication Theory and Methodology Division.

Miller G.A. (1956). The magical number seven, plus or minus two: Some limits on our capacity for processing information. Psychological Review. 63 (2) 81–97. doi:10.1037/h0043158. hdl:11858/00-001M-0000-002C-4646-B. ISSN 1939-1471. PMID 13310704.

Miller S., Stephen L. and Lovejoy J. (2020). How Theoretical are Media Social Science Theories? It's Difficult to Tell. An AEJMC Referred paper session on Communication Models and theories by Communication Theory and Methodology Division.

Nsude I. (2015). Awareness Creation on Discordant Couples and HIV/AIDS Transmission in Nigeria: Implications of HIV Prevention Policies. In Obiora F.I. and Sunny E.U. (Eds.) Emerging Trends in Gender, Health and Political Communication in Africa. Pp. 83-96.

Okon G.B. (2013). Contextualisation of Noncommunicable Heart Diseases in Select Nigerian Newspapers: Approaches and Patterns. In Obiora F.I. and Sunny E.U. (Eds.) Emerging Trends in Gender, Health and Political Communication in Africa. Pp. 97-109.

Okoro N., Nwachukwu C. and Ajaero I. (2015). Health Communication Strategies. In Obiora F.I. and Sunny E.U. (Eds) Emerging Trends in Gender, Health and Political Communication in Africa. Pp. 63-82.

Ou M. (2020). Risk and Efficacy Uncertainty as Motivators of Information Seeking and Protective Behaviors When Facing COVID-19. An AEJMC Referred paper session on Examining COVID-19 Communication and Information Behaviors by Communicating Science, Health, Environment and Risk Division

Paek H.J., Annise L.L., Jeong S., Wang T. and Dutta S. (2010). Emerging Landscape of Health Communication in Asia: Theoretical Contributions, Methodological Questions and Applied Collaborations. Health Communications 25 (6): 552-559. doi:101080/10410236.2010.496705

Ratzan C.S. (1994). Health communication and AIDS: Setting the agenda. In S.C. Ratzan (ed.), Effective health communication for the 90s. London: Routledge.

Rob G., Chew J. and Tham K. (2020). Adapting Uncertainty Reduction Theory for Crisis Communication: Guidelines for Technical Communicators.

Ruben B.D. (2014). Communication Theory and Health Communication Practice: The More Things Change, the More They Stay the Same. Health Communication 31(1): 1-11. https://www.researchgate.net/deref/http%3A%2F%2Fdx.doi.org%2F10.1080%2F10410236.2014.923086

Starr C. (1969). Social Benefits Versus Technological Risks". *Science*. 165 (3899): 1232–1238. doi:10.1126/science.165.3899.1232. PMID 5803536.

Sushma K. and Diddi L. (2020). Twitter Conversation Around COVID-19 During Pre-pandemic Period: Stigma and Information Format Cues. An AEJMC Referred paper session on Examining COVID-19 Communication and Information Behaviors by Communication Science, Health, Environment and Risk Division.

Tomkins S.S. (1962). Affect Imagery Consciousness. The Positive Affects. Tavistock.

Waxman O.B. (2020). How Does a Pandemic End? Here's What We Can Learn From the 1918 Flu. https://time.com/5894403/how-the-1918-flu-pandemic-ended/.

Weilu Z., Lingshu H. and Jihye P. (2020). When Virus Goes Political: A Computerized Text Analysis of Crisis Attribution on Covid-19 Pandemic. An AEJMC Referred paper Session on Examining COVID-19 Communication and Information Behaviors by Communication Science, Health, Environment and Risk Division

Wong J.C.S., Yang J., Liu Z., Lee D. and Yue Z. (2020). Fast and frugal: Information processing related to the Coronavirus Pandemic. An AEJMC Referred paper session on Examining COVID-19 Communication and Information Behaviors by Communication Science, Health, Environment and Risk Division worldometre.info (May 12, 2021). https://www.worldometers.info/coronavirus/country/nigeria/

Worldometer (2021). Covid live- Corona virus statistics. infohttps://www.worldometers.info/coronavirus/